MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2022/2023

PES0024 – ESSENTIAL STATISTICS

(All Sections/Groups)

6 OCTOBER 2023
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of TWELVE (**12**) printed pages with:
   Section A: Twenty (20) multiple choice questions (20 marks)
   Section B: Four (4) structured questions (80 marks)

2. Attempt **ALL** questions.

3. Students are allowed to use non-programmable scientific calculators (without restriction).

4. Please write all your answers in the Answer Booklet provided. All necessary workings **MUST** be shown.

5. Statistical formulas and tables are provided in the appendix.

SECTION A [20 marks]

1. When two coins are tossed simultaneously, what is the complementary event to the event "At least one head appears"?

a) Exactly one head appears
b) At least one tail appears
c) No tails appear
d) Both coins show tails

2. In a charity raffle event, the probability of winning the grand prize for a participant is 5 out of 100. If a total of 4000 raffle tickets are sold, how many tickets did the participant purchase?

a) 300
b) 200
c) 250
d) None of the above

3. The cumulative distribution function (CDF) of a random variable X is given by:

a) $F(x)=P(X \leq x)$
b) $F(x)=P(X \geq x)$
c) $F(x)=P(X = x)$
d) $F(x)=P(X > x)$

4. A continuous random variable X has a probability density function

$$f(x) = e^{-x}, 0 < x < \infty$$

Then $P(X>1)$ is

a) $\frac{1}{e}$
b) $\frac{1}{2}$
c) 0
d) 1

5. In a biology experiment, the probability of a particular reaction occurring (Event A) is 0.3, and the probability of another reaction occurring (Event B) is 0.6. Additionally, assume that these two reactions are independent. What is the probability of both events A and B occurring together?

a) $P(A) = 0.3$
b) $P(A) \times P(B) = (0.3)(0.6) = 0.18$
c) $P(A) + P(B) = 0.3 + 0.6 = 0.9$
d) None of the above.

Continued...

6. In a statistical analysis, which one of these situations represents a binomial random variable?
   a) The number of rainy days in a randomly selected week.
   b) The weight of fruits in a randomly selected basket.
   c) The number of red cars in a random sample of 5 cars.
   d) The age of a randomly selected person in a survey.

7. In a manufacturing process, a machine has a success rate of 0.9 in producing defect-free items. Two items are produced in succession. Assuming that the outcomes for the two items are independent, what is the probability that neither of the two items will be defect-free?
   a) 0.5
   b) 0.09
   c) 0.01
   d) 0.81

8. Which statement is not true about the 95% confidence level?
   a) Confidence intervals computed by using the same procedure will include the true population value for 95% of all possible random samples taken from the population.
   b) The procedure that is used to determine the confidence interval will provide an interval that includes the population parameter with probability of 0.95.
   c) The probability that the true value of the population parameter falls between the bounds of an already computed confidence interval is roughly 95%.
   d) If we consider all possible randomly selected samples of the same size from a population, the 95% is the percentage of those samples for which the confidence interval includes the population parameter.

9. In a survey conducted in a city, a randomly selected sample of 500 residents was asked whether or not they support the construction of a new public park in their neighbourhood. Forty-two percent (42%) of the 500 surveyed residents answered "yes." Which one of the following statements about the number 42% is correct?
   a) It is a sample statistic.
   b) It is a population parameter.
   c) It is a margin of error.
   d) It is a standard error.

10. In the context of a car rental company's rental rates, what does the expected value of a rental rate represent?
   a) The average rental rate over a year.
   b) The highest rental rate offered.
   c) The lowest rental rate offered.
   d) The most frequently rented car model.

Continued...

SECTION B

QUESTION 1 [20 marks]

a) Consider the word given below. The individual letters of this word are written on separate cards, shuffled, and arranged in a line.

i) In how many ways can the letters of the word 'LEADER' be arranged? (2 marks)

ii) In how many different ways can the letters of the word 'DETAIL' be arranged in such a way that the vowels occupy only the odd positions? (4 marks)

b) In a survey assessing the reading habits of train commuters, it was found that 30% of respondents regularly read broadsheet newspapers, 50% regularly read tabloid newspapers, and 25% do not read newspapers.

i) Draw a Venn Diagram showing all the possible outcomes. (2 marks)

ii) Find the probability that a randomly selected commuter reads both broadsheet and tabloid newspapers. (3 marks)

iii) Given that a commuter reads newspapers on a regular basis, determine the probability that he only reads tabloid newspapers. (3 marks)

c) A local park is conducting a survey to understand the preferences of children aged 5 to 10 when it comes to choosing between push bikes and bicycles for outdoor play. The cell values indicate the number of their choice by both genders.

	Girl	Boy	Total
Push Bikes	55	39	94
Bicycle	27	99	126
Total	82	138	220

Suppose a child is selected at random. Find the probability that the selected individual:

i) is a boy or push bikes. (3 marks)

ii) preferred a bicycle given that the individual is a girl. (3 marks)

Continued...

QUESTION 2 [20 marks]

a) The discrete random variable X has the probability function of:

$$P(X = x) = \begin{cases} k(3-x) & , \ for\ x = -1,0,1,2,3 \\ 0 & \text{otherwise} \end{cases}$$

i) Show that $k = \frac{1}{10}$ (4 marks)

ii) Find $E(X)$ (3 marks)

iii) Show that $E(X^2) = 1$ (3 marks)

iv) Find the standard deviation of $P(X = x)$ (2 marks)

b) The discrete random variable Y has probability distribution of

y	1	2	3	4
$P(Y=y)$	a	b	0.3	c

where a, b, and c are constant.

The cumulative distribution function $F(y)$ of Y is given in the following table.

y	1	2	3	4
$F(y)$	0.1	0.5	d	1.0

where d is a constant.

Find the value of a, b, c and d.

(8 marks)

Continued...

QUESTION 3 [20 marks]

a) In a local bakery, it is known that 80% of the muffins they bake turn out to be blueberry muffins. A customer plans to buy 5 muffins.

i) Calculate the probability that exactly 3 of the 5 muffins will be blueberry. (2 marks)

ii) Determine the mean of the number of blueberry muffins the customer is likely to buy. (2 marks)

b) A homemade small bakery shop sells their cakes at an average rate of 4 per day. Find the probability that the shop sells:

i) exactly 20 in a given week. (3 marks)

ii) less than 4 units in a day. (3 marks)

c) In a recent survey of the delivery times for a courier service in a suburban area, it was found that the mean delivery time was 45 minutes, with a standard deviation of 7 minutes. Assuming a normal distribution of delivery times, calculate the probability of a randomly selected delivery falling into the following categories:

i) between 40 and 50 minutes? (5 marks)

ii) taking more than 60 minutes for delivery? (3 marks)

iii) completed in less than 35 minutes? (2 marks)

QUESTION 4 [20 marks]

(a) In a recent survey conducted by a reputable fitness centre, it was found that the estimated average monthly membership fee paid by gym-goers in a Cyberjaya is expected to be around RM150.00, with a population standard deviation of RM40. The membership fee covers not only access to state-of-the-art fitness equipment but also includes access to group fitness classes and personalized training sessions. The survey collected data from a diverse sample of n = 200 gym members from various parts of the city. Calculate a 90% confidence interval estimate of the population mean monthly membership fee paid by gym-goers in Cyberjaya. (6 marks)

Continued...

(b) Suppose that the population is the weight of six items (in grams) displayed in a Summer Fest event "guess the weight" game booth. You are asked to guess the average weight of the six different items by taking a random sample without replacement from the population. A toy store owner, aim to estimate the average weight of toys in the inventory. The toys include action figures, stuffed animals, building blocks, board games, puzzles, and remote-controlled cars. Five toys were randomly selected and their weights were recorded in grams. List all possible samples and then, calculate the sample mean and sampling error for each sample.

Items	Weight (in grams)
Action Figure (A)	50
Stuffed Animal (B)	200
Building Blocks (C)	300
Board Game (D)	800
Puzzle (E)	500
Remote-Controlled Car (F)	600

(14 marks)

End of questions.

APPENDIX

STATISTICAL FORMULA

A. DESCRIPTIVE STATISTICS

Ungrouped data

	Population	Sample
Mean :	$\mu = \frac{\sum X}{n}$	$\bar{X} = \frac{\sum x}{n}$
Variance :	$\sigma^2 = \frac{\sum (X-\mu)^2}{N}$ or $\sigma^2 = \frac{\sum X^2}{N} - \mu^2$	$s^2 = \frac{\sum (x-\bar{x})^2}{n-1}$ or $s^2 = \frac{\sum x^2}{n-1} - \frac{(\sum x)^2}{n(n-1)}$
Standard Deviation :	$\sigma = \sqrt{\sigma^2}$	$s = \sqrt{s^2}$

Grouped data

	Population	Sample
Mean :	$\mu = \frac{\sum fX}{N}$ where X is the observation value or the midpoint of the interval.	$\bar{X} = \frac{\sum fx}{n}$ where x is the observation value or the midpoint of the interval.
Variance :	$\sigma^2 = \frac{\sum f(X-\mu)^2}{N}$ or $\sigma^2 = \frac{\sum fX^2}{N} - \mu^2$ where X is the observation value or the midpoint of the interval.	$s^2 = \frac{\sum f(x-\bar{x})^2}{n-1}$ or $s^2 = \frac{\sum fx^2}{n-1} - \frac{(\sum fx)^2}{n(n-1)}$ where x is the observation value or the midpoint of the interval.

Continued...

Standard Deviation :	$\sigma = \sqrt{\sigma^2}$	$s = \sqrt{s^2}$

Other measures

- Median for the grouped data:

$$Median = L_m + \left[\frac{(n/2) - \sum f_{m-1}}{f_m}\right] \times C$$

where n = sample size,
L_m = lower limit of the median class,
$\sum f_{m-1}$ = cumulative frequency before the median class,
f_m = frequency of the median class, and
C = median class size.

- Mode for the grouped data:

$$Mode = L + \left[\frac{f_0 - f_1}{(f_0 - f_1) + (f_0 - f_2)}\right] \times C$$

where L = lower boundary of the class containing mode,
C = size of the class containing mode,
f_0 = frequency of the class containing mode,
f_1 = frequency of the class before the class containing mode, and
f_2 = frequency of the class after the class containing mode.

B. PROBABILITY

Basic Probability Rules

$P(A \cup B) = P(A) + P(B) - P(A \cap B)$

$P(A \cap B) = P(A) \cdot P(B)$ if A and B are independent

$P(A \mid B) = P(A \cap B) \div P(B)$

C. RANDOM VARIABLES

Discrete Random Variable

Mean: $E(X) = \sum xP(x)$

Variance: $\text{Var}(X) = E(X^2) - [E(X)]^2$ where $E(X^2) = \sum x^2 P(x)$

Continued...

Continuous Random Variable

Mean: $E(X) = \int_{-\infty}^{\infty} xf(x)\,dx$

Variance: $\text{Var}(X) = E(X^2) - [E(X)]^2$ where $E(X^2) = \int_{-\infty}^{\infty} x^2 f(x)\,dx$

D. PROBABILITY DISTRIBUTIONS

Binomial Probability Distribution

$X \sim \text{B}(n, p)$

Probability: $P(X = x) = {}^nC_x p^x q^{n-x}$

Mean: $\mu = E(X) = np$

Variance: $\sigma^2 = Var(X) = npq$ where $q = 1 - p$

Poisson Probability Distribution

$X \sim \text{Po}(\lambda)$

Probability: $P(X = x) = \dfrac{e^{-\lambda}\lambda^x}{x!}$

Mean: $\mu = E(X) = \lambda$

Variance: $\sigma^2 = Var(X) = \lambda$

Normal Probability Distribution

$X \sim \text{N}(\mu, \sigma)$ where the mean = $E(X) = \mu$ and variance = $Var(X) = \sigma^2$.

If X is standardized to $Z \sim \text{N}(0, 1)$, then $z = (x - \mu)/\sigma$.

E. SAMPLING DISTRIBUTIONS

Mean: $\mu_{\bar{x}} = \mu$ Standard deviation: $\sigma_{\bar{x}} = \sigma/\sqrt{n}$

Continued...

F. CONFIDENCE INTERVAL

$(100-\alpha)\%$ confidence interval for population mean: $\overline{X} \pm Z_{\alpha/2}\left(\frac{\sigma}{\sqrt{n}}\right)$

Margin of error: $Z_{\alpha/2}\left(\frac{\sigma}{\sqrt{n}}\right)$

Confidence level:

Confidence level	$\alpha/2$	Z value
90%	5%	**1.645**
95%	2.5%	1.96
96%	2%	2.05
97%	1.5%	2.17
98%	1%	2.33
99%	0.5%	**2.58**

STATISTICAL TABLES

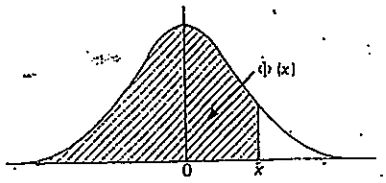
TABLE 2. THE POISSON DISTRIBUTION FUNCTION

μ	$r=0$	1	2	3	4	5	6	7	8	9	10
3·50	0·0302	0·1359	0·3208	0·5366	0·7254	0·8576	0·9347	0·9733	0·9901	0·9967	0·9990
·55	·0287	·1307	·3117	·5259	·7160	·8509	·9308	·9713	·9893	·9963	·9989
·60	·0273	·1257	·3027	·5152	·7064	·8441	·9267	·9692	·9883	·9960	·9987
·65	·0260	·1209	·2940	·5046	·6969	·8372	·9225	·9670	·9873	·9956	·9986
·70	·0247	·1162	·2854	·4942	·6872	·8301	·9182	·9648	·9863	·9952	·9984
3·75	0·0235	0·1117	0·2771	0·4838	0·6775	0·8229	0·9137	0·9624	0·9852	0·9947	0·9983
·80	·0224	·1074	·2689	·4735	·6678	·8156	·9091	·9599	·9840	·9942	·9981
·85	·0213	·1032	·2609	·4633	·6581	·8081	·9044	·9573	·9828	·9937	·9979
·90	·0202	·0992	·2531	·4532	·6484	·8006	·8995	·9546	·9815	·9931	·9977
·95	·0193	·0953	·2455	·4433	·6386	·7929	·8945	·9518	·9801	·9925	·9974
4·00	0·0183	0·0916	0·2381	0·4335	0·6288	0·7851	0·8893	0·9489	0·9786	0·9919	0·9972
·05	·0174	·0880	·2309	·4238	·6191	·7773	·8841	·9458	·9771	·9912	·9969
·10	·0166	·0845	·2238	·4142	·6093	·7693	·8786	·9427	·9755	·9905	·9966
·15	·0158	·0812	·2169	·4047	·5996	·7613	·8731	·9394	·9738	·9897	·9963
·20	·0150	·0780	·2102	·3954	·5898	·7531	·8675	·9361	·9721	·9889	·9959

Continued...

TABLE 4. THE NORMAL DISTRIBUTION FUNCTION

The function tabulated is $\Phi(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x} e^{-\frac{1}{2}t^2}\, dt$. $\Phi(x)$ is the probability that a random variable, normally distributed with zero mean and unit variance, will be less than or equal to x. When $x < 0$ use $\Phi(x) = 1 - \Phi(-x)$, as the normal distribution with zero mean and unit variance is symmetric about zero.



x	$\Phi(x)$	x	$\Phi(x)$	x	$\Phi(x)$	x	$\Phi(x)$	x	$\Phi(x)$	x	$\Phi(x)$
0·00	0·5000	0·40	0·6554	0·80	0·7881	1·20	0·8849	1·60	0·9452	2·00	0·97725
·01	·5040	·41	·6591	·81	·7910	·21	·8869	·61	·9463	·01	·97778
·02	·5080	·42	·6628	·82	·7939	·22	·8888	·62	·9474	·02	·97831
·03	·5120	·43	·6664	·83	·7967	·23	·8907	·63	·9484	·03	·97882
·04	·5160	·44	·6700	·84	·7995	·24	·8925	·64	·9495	·04	·97932
0·05	0·5199	0·45	0·6736	0·85	0·8023	1·25	0·8944	1·65	0·9505	2·05	0·97982
·06	·5239	·46	·6772	·86	·8051	·26	·8962	·66	·9515	·06	·98030
·07	·5279	·47	·6808	·87	·8078	·27	·8980	·67	·9525	·07	·98077
·08	·5319	·48	·6844	·88	·8106	·28	·8997	·68	·9535	·08	·98124
·09	·5359	·49	·6879	·89	·8133	·29	·9015	·69	·9545	·09	·98169
0·10	0·5398	0·50	0·6915	0·90	0·8159	1·30	0·9032	1·70	0·9554	2·10	0·98214
·11	·5438	·51	·6950	·91	·8186	·31	·9049	·71	·9564	·11	·98257
·12	·5478	·52	·6985	·92	·8212	·32	·9066	·72	·9573	·12	·98300
·13	·5517	·53	·7019	·93	·8238	·33	·9082	·73	·9582	·13	·98341
·14	·5557	·54	·7054	·94	·8264	·34	·9099	·74	·9591	·14	·98382
0·15	0·5596	0·55	0·7088	0·95	0·8289	1·35	0·9115	1·75	0·9599	2·15	0·98422
·16	·5636	·56	·7123	·96	·8315	·36	·9131	·76	·9608	·16	·98461
·17	·5675	·57	·7157	·97	·8340	·37	·9147	·77	·9616	·17	·98500
·18	·5714	·58	·7190	·98	·8365	·38	·9162	·78	·9625	·18	·98537
·19	·5753	·59	·7224	·99	·8389	·39	·9177	·79	·9633	·19	·98574
0·20	0·5793	0·60	0·7257	1·00	0·8413	1·40	0·9192	1·80	0·9641	2·20	0·98610
·21	·5832	·61	·7291	·01	·8438	·41	·9207	·81	·9649	·21	·98645
·22	·5871	·62	·7324	·02	·8461	·42	·9222	·82	·9656	·22	·98679
·23	·5910	·63	·7357	·03	·8485	·43	·9236	·83	·9664	·23	·98713
·24	·5948	·64	·7389	·04	·8508	·44	·9251	·84	·9671	·24	·98745
0·25	0·5987	0·65	0·7422	1·05	0·8531	1·45	0·9265	1·85	0·9678	2·25	0·98778
·26	·6026	·66	·7454	·06	·8554	·46	·9279	·86	·9686	·26	·98809
·27	·6064	·67	·7486	·07	·8577	·47	·9292	·87	·9693	·27	·98840
·28	·6103	·68	·7517	·08	·8599	·48	·9306	·88	·9699	·28	·98870
·29	·6141	·69	·7549	·09	·8621	·49	·9319	·89	·9706	·29	·98899
0·30	0·6179	0·70	0·7580	1·10	0·8643	1·50	0·9332	1·90	0·9713	2·30	0·98928
·31	·6217	·71	·7611	·11	·8665	·51	·9345	·91	·9719	·31	·98956
·32	·6255	·72	·7642	·12	·8686	·52	·9357	·92	·9726	·32	·98983
·33	·6293	·73	·7673	·13	·8708	·53	·9370	·93	·9732	·33	·99010
·34	·6331	·74	·7704	·14	·8729	·54	·9382	·94	·9738	·34	·99036
0·35	0·6368	0·75	0·7734	1·15	0·8749	1·55	0·9394	1·95	0·9744	2·35	0·99061
·36	·6406	·76	·7764	·16	·8770	·56	·9406	·96	·9750	·36	·99086
·37	·6443	·77	·7794	·17	·8790	·57	·9418	·97	·9756	·37	·99111
·38	·6480	·78	·7823	·18	·8810	·58	·9429	·98	·9761	·38	·99134
·39	·6517	·79	·7852	·19	·8830	·59	·9441	·99	·9767	·39	·99158
0·40	0·6554	0·80	0·7881	1·20	0·8849	1·60	0·9452	2·00	0·9772	2·40	0·99180

Continued...

TABLE 4. THE NORMAL DISTRIBUTION FUNCTION

x	$\Phi(x)$	x	$\Phi(x)$	x	$\Phi(x)$	x	$\Phi(x)$	x	$\Phi(x)$	x	$\Phi(x)$
2·40	0·99180	2·55	0·99461	2·70	0·99653	2·85	0·99781	3·00	0·99865	3·15	0·99918
·41	·99202	·56	·99477	·71	·99664	·86	·99788	·01	·99869	·16	·99921
·42	·99224	·57	·99492	·72	·99674	·87	·99795	·02	·99874	·17	·99924
·43	·99245	·58	·99506	·73	·99683	·88	·99801	·03	·99878	·18	·99926
·44	·99266	·59	·99520	·74	·99693	·89	·99807	·04	·99882	·19	·99929
2·45	0·99286	2·60	0·99534	2·75	0·99702	2·90	0·99813	3·05	0·99886	3·20	0·99931
·46	·99305	·61	·99547	·76	·99711	·91	·99819	·06	·99889	·21	·99934
·47	·99324	·62	·99560	·77	·99720	·92	·99825	·07	·99893	·22	·99936
·48	·99343	·63	·99573	·78	·99728	·93	·99831	·08	·99896	·23	·99938
·49	·99361	·64	·99585	·79	·99736	·94	·99836	·09	·99900	·24	·99940
2·50	0·99379	2·65	0·99598	2·80	0·99744	2·95	0·99841	3·10	0·99903	3·25	0·99942
·51	·99396	·66	·99609	·81	·99752	·96	·99846	·11	·99906	·26	·99944
·52	·99413	·67	·99621	·82	·99760	·97	·99851	·12	·99910	·27	·99946
·53	·99430	·68	·99632	·83	·99767	·98	·99856	·13	·99913	·28	·99948
·54	·99446	·69	·99643	·84	·99774	·99	·99861	·14	·99916	·29	·99950
2·55	0·99461	2·70	0·99653	2·85	0·99781	3·00	0·99865	3·15	0·99918	3·30	0·99952

The critical table below gives on the left the range of values of x for which $\Phi(x)$ takes the value on the right, correct to the last figure given; in critical cases, take the upper of the two values of $\Phi(x)$ indicated.

3·075	0·9990	3·263	0·9994	3·731	0·99990	3·916	0·99995
3·105	0·9991	3·320	0·9995	3·759	0·99991	3·976	0·99996
3·138	0·9992	3·389	0·9996	3·791	0·99992	4·055	0·99997
3·174	0·9993	3·480	0·9997	3·826	0·99993	4·173	0·99998
3·215	0·9994	3·615	0·9998	3·867	0·99994	4·417	0·99999
			0·9999		0·99995		1·00000

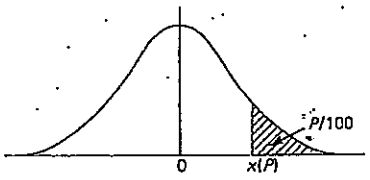
When $x > 3{\cdot}3$ the formula $1-\Phi(x) \doteqdot \frac{e^{-\frac{1}{2}x^2}}{x\sqrt{2\pi}}\left[1-\frac{1}{x^2}+\frac{3}{x^4}-\frac{15}{x^6}+\frac{105}{x^8}\right]$ is very accurate, with relative error less than $945/x^{10}$.

TABLE 5. PERCENTAGE POINTS OF THE NORMAL DISTRIBUTION

This table gives percentage points $x(P)$ defined by the equation

$$\frac{P}{100} = \frac{1}{\sqrt{2\pi}}\int_{x(P)}^{\infty} e^{-\frac{1}{2}t^2}\,dt.$$

If X is a variable, normally distributed with zero mean and unit variance, $P/100$ is the probability that $X \geqslant x(P)$. The lower P per cent points are given by symmetry as $-x(P)$, and the probability that $|X| \geqslant x(P)$ is $2P/100$.



P	$x(P)$	P	$x(P)$	P	$x(P)$	P	$x(P)$	P	$x(P)$	P	$x(P)$
50	0·0000	5·0	1·6449	3·0	1·8808	2·0	2·0537	1·0	2·3263	0·10	3·0902
45	0·1257	4·8	1·6646	2·9	1·8957	1·9	2·0749	0·9	2·3656	0·09	3·1214
40	0·2533	4·6	1·6849	2·8	1·9110	1·8	2·0969	0·8	2·4089	0·08	3·1559
35	0·3853	4·4	1·7060	2·7	1·9268	1·7	2·1201	0·7	2·4573	0·07	3·1947
30	0·5244	4·2	1·7279	2·6	1·9431	1·6	2·1444	0·6	2·5121	0·06	3·2389
25	0·6745	4·0	1·7507	2·5	1·9600	1·5	2·1701	0·5	2·5758	0·05	3·2905
20	0·8416	3·8	1·7744	2·4	1·9774	1·4	2·1973	0·4	2·6521	0·01	3·7190
15	1·0364	3·6	1·7991	2·3	1·9954	1·3	2·2262	0·3	2·7478	0·005	3·8906
10	1·2816	3·4	1·8250	2·2	2·0141	1·2	2·2571	0·2	2·8782	0·001	4·2649
5	1·6449	3·2	1·8522	2·1	2·0335	1·1	2·2904	0·1	3·0902	0·0005	4·4172

End of page.